UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,023	06/21/2001	Takehito Kimata	2635-22	4404

7590 10/15/2002

NIXON & VANDERHYE P.C.
8th Floor
1100 North Glebe Rd.
Arlington, VA 22201-4714

EXAMINER	
CYGAN, MICHAEL T	
ART UNIT	PAPER NUMBER
2856	

DATE MAILED: 10/15/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/885,023	Applicant(s) KIMATA ET AL.	
	Examiner Michael Cygan	Art Unit 2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-6 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-6 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 21 June 2001 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3,5 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "211" and "213" have both been used to designate the larger diameter portion of element insertion hole in Figures 7 and 12A. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities: on page 14, line 6, the phrase "lower than 1.5 m" appears to be incorrect; the proper phrase should be "greater than 1.5 m" as shown in Figure 5. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

While applicant may be his or her own lexicographer, a term in a claim may not be given a meaning repugnant to the usual meaning of that term. See *In re Hill*, 161 F.2d 367, 73 USPQ 482 (CCPA 1947).

With respect to claim 1, the term "strength" is used, but is expressed as a force (N). The mechanical term "strength" must always be qualified by the type of stress to be applied (e.g., tensile, compressive, shear). Furthermore, "strength" must be expressed in units of force per unit area (Pa) rather than units of force. It appears that the stated range is directed to the load applied to the entire sensor (see page 14, lines 22-27), not a "strength" of the filling material.

With respect to claim 2, the term "filling rate" is used, but is expressed as a percentage. Rate must be expressed in terms of the change of a variable per change of unit time, not as a percentage. It appears (from the description at page 2, lines 14-24) that the applicant is disclosing a percentage of filling volume or density, not filling rate.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1, 2, 4, and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noda (EP 932,039 A2). Noda discloses a gas sensor

comprising a housing [3] with an air side cover [18] attached to a proximal housing end and enclosing an aerial atmosphere, and a gas side cover [6a,6b] attached to a distal housing end and confining a measured gas; within the housing rests a cylindrical insulator [4] having a gas sensor element [2] having opposing surfaces held in a through-hole (which has differently sized diameter portions) of the insulator by a sealing element [32] and a cushion element [33,34]. See Figure 1; column 3, line 44 through column 4, line 9; column 6, lines 31+.

Noda does not discloses the features (as best understood) of claims 1 and 2 pertaining to the ranges of 5N-1000N and of 10%-80%. With respect to claim 1, it would have been obvious to one having ordinary skill in the art at the time the invention was made to withstand shock forces of such ranges, as Noda teaches the desirability of withstanding shock forces (column 1, lines 23-26; column 2, lines 5-9; column 5, lines 17-52), since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980). With respect to claim 2, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have a filling percentage of such ranges, as Noda teaches the desirability of compressing the cushion material (column 7, lines 33-37), since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Noda (EP 932,039 A2) in view of Kuisell (US 5,817,920). Noda teaches the claimed invention except for the range of 5N-1000N and an insulator comprised of separate bodies. With respect to the range of 5N-1000N, it would have been obvious to one having ordinary skill in the art at the time the invention was made to withstand shock forces of such ranges, as Noda teaches the desirability of withstanding shock forces (column 1, lines 23-26; column 2, lines 5-9; column 5, lines 17-52), since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980). With respect to the insulator, Kuisell discloses a gas sensor having an insulator comprised of separate bodies attached at their ends by a glass spacer (Figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an insulator comprised of separate bodies attached to each other by a spacer as taught by Kuisell in the invention disclosed by Noda to form the insulator which holds the gas sensing element, since this would result in increased shock resistance by mechanically decoupling the seal from the outer shell.

Allowable Subject Matter

6. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and if rejections based upon USC 112 were overcome, since the prior art neither discloses nor fairly teaches an injection port in combination with the claimed limitations.

Conclusion

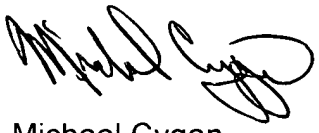
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. "Metals Handbook – Mechanical Testing" defines strength as "maximum nominal stress a material can sustain. Always qualified by the type of stress (tensile, compressive, or shear)", and defines stress as "expressed in force per unit area". Takami (US 4,656,863) discloses a gas sensor having seal and cushion which survives drops from a meter height.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Cygan whose telephone number is 703-305-0846. The examiner can normally be reached on 8:30-6 M-Th, alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on 703-305-4705. The fax phone

numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-3431.



Michael Cygan
October 9, 2002